to an unnecessary degree of severity; (2) that resection of one-fourth or one-half inch of the nerves anterior to the ganglion and within the cranium, with the interposition of rubber tissue, can be relied upon for perfect cure, up to six years at least, with probability of permanency as great as by any method; (3) that it is a simple, speedy, and safe method, and thereby fulfils the highest aims of the best surgery. JELLIFFE.

THE CHANGES IN THE SPINAL CORD AND MEDULLA IN PERNICIOUS ANEMIA. Frank Billings (The Chicago Medical Recorder, Jan., 1903).

From careful study of the subject the author concludes (1.) That there is a well established relation of diffuse cord degeneration with pernicious anemia; (2) It seems probable that the hemolysis and the cord changes are due to the same toxin; (3.) While the source of the toxin is unknown, the fact that gastro-intestinal disturbance is so common in the disease would lead one to suppose that it is of intestinal origin; (4) The diffuse degenerations of the spinal cord which occur in conditions without pernicious anemia do not appear to differ essentially from those of pernicious anemia; (5) It is possible that a common blood circulating poison exists which may expend its force upon the blood in one individual, upon the nervous apparatus in another, and coincidently upon the blood and spinal cord in others.

J. E. CLARK (New York).

HEREDITY OF MENTAL DISEASE IN GENERAL. Dr. J. Wiglesworth, Medical Superintendent of Rainhill Asylum (The Hospital, Feb. 14, 1903).

The author deals at some length with important and practical facts collected in a long experience and referring to the question of the hereditary transmission of mental diseases. It used to be taught in the earlier days of biological science that "the respective shares which the sperm-cell (spermatozoon) and the germ-cell (ovum) contributed to the act of fertilization were of a different order, the germ cell furnishing the matter, the sperm-cell supplying the force which animated that matter, and started it upon its career of development." This view can no longer be held in the light of modern research. We now know that the portion of the germ-cell or ovum which takes the main part in the formation of the fetus or offspring is the nucleus. It is to the union of the nucleus of the sperm-cell with that of the germ-cell that the development of the fetus is due, the two nuclei (male and female respectively) contributing equal shares, in the material sense, to the process. The nuclear material which thus constitutes the vehicle of transmission of herditary qualities to the fetus from both parents, is itself an organized and complex structure, into whose composition there enter probably many millions of molecules of multiform character, and which singly or in groups take part in the development of every portion of the fetus. Prior to fertilization the nucleus of the ovum undergoes a series of changes whereby one-half of the nuclear "chromatic substance" is divided off and extruded. Precisely analogous changes take place with regard to the nucleus of the spermatozoon with the exception that each half of the "chromatic substance" resulting from the division continues as a sperm-cell. Although the precise interpretation of these "reducing divisions" is still obscure, the net result is obviously to diminish by one-half the chromatic substance contained both in the germ-cell and in the sperm-cell. And it seems clear that the chief object of this process is to prevent indefinite increase in the mass of the nuclear substance, and thus to secure uniformity of mass. But this "reducing division" is not merely a process for keeping the mass of the nuclear substance uniform in size. For prior to the operation of "reducing division" the nuclear structures (chromatic rods) undergo a process of splitting or cleavage by which each chromatic rod is split longitudinally into halves. Weismann, whose monumental work on heredity has done much to illuminate the subject, believes that the object of this primary doubling of the nuclear rods is to increase the possible number of combinations of the germ plasma, and therefore the number of varieties which result from the union of the parent cells after "reducing division" has been completed. This is clearly a factor of immense importance in phyletic development. Natural selection acts always and everywhere by seizing upon and fixing favorable varieties, and the greater the number of variations it has to work upon, the greater is the chance of a type being developed adapted to any particular environment. There can be no doubt that only a fraction of the countless variations which are being continually produced become permanently fixed, the rest being silently quenched by the operation of this great natural law. Hence the vast importance of obtaining the greatest possible diversity in the minute structure of the germ plasma, so as to furnish an abundant material for natural selection to work upon. The above observations will show that the problem of heredity is one of great complexity.

The problem of heredity is for the alienist one of particular interest and importance, for it is daily demonstrated that mental (cerebral) peculiarities, no less than bodily ones, descend from parent to child, and that the aberrant mental traits of one generation are the logical sequence of the mental abnormalities of preceding generations. The practical questions which may be addressed to psychological medicine on this point are many. For example, what proportion of insane parents owe their insanity to definite hereditary taint? and in how many, on the other hand, can the insanity be said, in the strictest sense, to have been acquired in the course of the individual life? Is one sex more prone to hereditary insanity than the other? Is one parent more potent than the other in transmitting the disease to the offspring, and are the male and female children affected in different numerical proportions, according as their insanity is derived from the father or the mother? Do the different forms of insanity differ from one another in the degree with which they tend to be inherited? Can the result of disease acquired by a parent be transmitted to the offspring so as to appear in the latter in the form of a tendency to insanity? Is there any diathesis (other than insanity) occurring in one parent which, when associated with the insane diathesis in the other parent might tend to neutralize transmission of the latter diathesis to the offspring, and, conversely, is there any diathesis which tends to reinforce the insane diathesis and to add, therefore, to the dangers? With the object of answering some of these questions an inquiry was made into the family history of a series of cases of insanity observed by Dr. Wiglesworth. These statistical inquiries deal with a series of 3,445 patients admitted to Rainhill Asylum during a period of 12 years, 1,693 of the patients being males, and 1,752 females. These were "patients concerning whose family history any details whatever were obtainable," and in whose direct parentage (fathers, mothers, and grandparents) or collaterals (brothers, sisters, uncles and aunts) insanity, if it was met with, was regarded as a hereditary factor. Patients whose cousins only afforded evidence of insanity were not included in the class of hereditary insanity, as it was thought that there was an equal chance of such taint having been introduced by marriage from an entirely different family, and it could not be assumed, without further proof, that such taint belonged to the family of the patient. "Out of the whole series of 3,445 patients a definite hereditary taint of insanity, epilepsy, or a marked degree of eccentricity or peculiarity, either direct or collateral, was found in 965 cases, a percentage on the whole number of 28.01." There can be no doubt that this figure errs, adds Dr. Wiglesworth, on the side of deficiency, as it is difficult to get trustworthy information as to the family history of our patients, especially when they belong to the pauper class. Farquharson, a recent observer, dealing with a large number of patients of a similar class, obtained a percentage of hereditary taint of 30.7. Statistics drawn from institutions which receive private patients—as distinguished from paupers—usually give appreciably higher results. Thus Grainger Stewart found a percentage of 49.6 among the patients admitted into the Crichton Royal Asylum. Reverting to Dr. Wiglesworth's figures, which give an hereditary taint of insanity in 28.1 per cent, or 965 out of 3,445 patients, it is found that the sexes exhibit a difference. Of these 965 patients, 419 were males and 546 females; and a simple calculation of these numbers in relation to the separate totals of male and female patients investigated in the report shows that the percentage of hereditary taint was 24.74 for male patients, and 31.16 for females. This striking difference has an interest which is enhanced by the fact that it harmonizes with the records of previous investigators, almost all of whom have found a higher percentage of hereditary taint among the female patients than amongst the male. Thus Thurnam gives a percentage of 32.82 for the males and 35.48 for the females; Grainger Stewart gives 48.56 for males and 51.05 for females; while Farquharson gives 27.4 per cent for males and 34.16 per cent for females. The conclusion has hence been drawn that the female sex has a greater liability to suffer from hereditary insanity than the male. It has been suggested that the female sex has to pass during life through physiological crises—puberty, pregnancy and the parturition, lactation, and the menopause—which constitute periods of danger, and which are prone to evoke into activity any latent hereditary taint of insanity, whereas in the male sex such danger is over. when the age of sexual maturity (25 years) is attained. It appears, however, that certain forms of insanity, to be mentioned later, are more often acquired in the lifetime of the individual in males than in females, and that when these are excluded the difference between the sexes as regards the hereditary incidence of insanity it not so marked.

HOW NOT TO BE NERVOUS. Hugh T. Patrick (Journal American Medical Association, February 7, 1903).

For preventing nervousness in the child or removing that already present, nothing is so effective as the toughening of the body and mind. A child with hard muscles, strong lungs and a vigorous digestion, who can bear changes of temperature and endure pain is already a long way from nervousness. More important is the "toughness of the psychic fiber." The child who can support disappointment, who can be "crossed" without a tantrum, and who habitually obeys is building a bulwark against "nerves." Beside premature entrance into society and magnifying the importance of a child in the family, harm is done by allowing the child to experience fear, usually started by suggestions of parents, or nurses. The writer shows that overwork seldom causes nervousness, but the lack of work, misplaced energy, or worry and indecision surely causes it. Overrating one's natural ability and failure to appreciate the limit of intellectual and physical power surely develops nervous conditions sooner or later. W. B. NOYES.

THE DIAGNOSTIC SYMPTOMS OF TUMORS OF THE BRAIN. J. Arthur Booth (Medical Critic, February, 1903).

Of the general symptoms of brain tumor, headache, vomiting, vertigo, mental dulness and optic neuritis, headache is the most frequent and distressing; but unless associated with other general symptoms it is not of much diagnostic importance. Localized pain with tenderness on pressure suggests that the tumor is superficial. Vomiting without obvious cause at irregular intervals is a common and distressing symptom. Vertigo is common, especially in lesions of the cerebellum or base of the brain. Double optic neuritis is the most important symptom, without which a positive diagnosis is difficult. The group of localizing symptoms is important, especially motor symptoms. Of cases reported by the writer, the first at operation showed a large superficial sarcomatous mass at the upper part of the left anterior central convolution. This had caused double optic neuritis, epileptic attacks, the spasm at first limited to the big toe of the right foot, but later involving the arm and leg of the same side; no loss of consciousness; blurring of vision and later blindness of the left eye. Headache and vomiting were late symptoms.